		Pushing the E	nvelope
		2005 Scier	
		Course of S	tudy
Alabama Science			
Grades K-12			
Activity/Lesson	State	Standards	
			Students make measurements using
Types of Engines (appropriate metric units for measuring length,
pgs. 11-23)	AL	SCI.K-12.4	volume, and mass
			Students make measurements using
Chemistry (pgs. 25-			appropriate metric units for measuring length,
41)	AL	SCI.K-12.4	volume, and mass
		Pushing the Ei 2005 Sciei	
		Course of S	
Alabama Science		Course of 3	nuuy
Grade 5			
Activity/Lesson	State	Standards	
Activity/Lc330ii	Otate	Otaridards	Students will identify evidence of chemical
Chemistry (pgs. 25-			changes through color, gas formation, solid
41)	AL	SCI.5.1	formation, and temperature change.
71)	/\L	001.0.1	Students will understand mass, volume and
Physics and Math			density including relating density to the sinking
(pgs. 43-63)	AL	SCI.5.2.3	or floating of an object in a liquid
(pgs. 45-65)	AL	001.3.2.3	or noating or an object in a liquid
		Pushing the E	nvelope
		2005 Scier	
		Course of S	tudy
Alabama Science			
Grade 8			
Activity/Lesson	State	Standards	
			Students will identify Newton's three laws of
History of Aviation			motion including interpreting distance-time
Propulsion (pgs. 5-9)	AL	SCI.8.8.2	graphs
			Students will identify steps in the scientific
			method including measuring dimension, volume,
Types of Engines (and mass using Système International d'Unités
pgs. 11-23)	AL	SCI.8.1.3	(SI units)
			Students will identify steps in the scientific
			method including measuring dimension, volume,
Chemistry (pgs. 25-			and mass using Système International d'Unités
Chemistry (pgs. 25-41)	AL	SCI.8.1.3	(SI units)
	AL	SCI.8.1.3	
	AL	SCI.8.1.3	(SI units)
	AL	SCI.8.1.3	(SI units) Students will describe how mechanical
	AL	SCI.8.1.3	(SI units) Students will describe how mechanical advantages of simple machines reduce the
	AL	SCI.8.1.3	(SI units) Students will describe how mechanical advantages of simple machines reduce the amount of force needed for work. Describe how
	AL	SCI.8.1.3	(SI units) Students will describe how mechanical advantages of simple machines reduce the amount of force needed for work. Describe how mechanical advantages of simple machines

			Students will identify Newton's three laws of motion defining terminology such as action and
Physics and Math	A.	001004	reaction forces, inertia, acceleration,
(pgs. 43-63)	AL	SCI.8.8.1	momentum, and friction Students will identify Newton's three laws of
			motion defining terminology such as action and
Rocket Activity (pgs.			reaction forces, inertia, acceleration,
69-75)	AL	SCI.8.8.1	momentum, and friction
			Students will describe how mechanical
			advantages of simple machines reduce the
			amount of force needed for work. Describe how
			mechanical advantages of simple machines
Dookst Astivity (ngs			reduce the amount of force needed for work. Students will describe the effect of force on
Rocket Activity (pgs. 69-75)	AL	SCI.8.9.1	pressure in fluids
09-13)	AL	301.0.9.1	pressure in nuius
		Pushing the Enve	elope
		2005 Science	9
		Course of Stu	dy
Alabama Science	ol Opiomos Como		
Grades 9-12 (Physica Activity/Lesson	State	Standards	
Activity/Lesson	State	Standards	
			Students will relate velocity, acceleration, and
			kinetic energy to mass, distance, force, and time
History of Aviation			including interpreting graphic representations of
Propulsion (pgs. 5-9)	AL	SCI.9-12.PS.7.1	velocity versus time and distance versus time
			Students will identify metric units for mass,
History of Aviation	Δ.	001 0 40 00 40	distance, time, temperature, velocity,
Propulsion (pgs. 5-9)	AL	SCI.9-12.PS.12	acceleration, density, force, energy, and power. Students will relate velocity, acceleration, and
			kinetic energy to mass, distance, force, and time
Types of Engines (including solving problems for velocity,
pgs. 11-23)	AL	SCI.9-12.PS.7.2	acceleration, force, work, and power
,			Students will identify metric units for mass,
Types of Engines (distance, time, temperature, velocity,
pgs. 11-23)	AL	SCI.9-12.PS.12	acceleration, density, force, energy, and power.
01			Students will identify metric units for mass,
Chemistry (pgs. 25-	Δ1	CCI 0 12 DC 12	distance, time, temperature, velocity,
41)	AL	SCI.9-12.PS.12	acceleration, density, force, energy, and power. Students will relate velocity, acceleration, and
			kinetic energy to mass, distance, force, and time
Physics and Math			including dolving problems for velocity,
(pgs. 43-63)	AL	SCI.9-12.PS.7.2	acceleration, force, work, and power
			Students will relate velocity, acceleration, and
			kinetic energy to mass, distance, force, and time
Physics and Math			including describing action and reaction forces, inertia, acceleration, momentum, and friction in
(pgs. 43-63)	AL	SCI 9-12 PS 7 3	terms of Newton's three laws of motion
(pgs. 10-00)	r\L	JUUI.8-12.FU.1.3	tornia di Newtoria tilice iawa di Iliutidii

			Students will relate velocity, acceleration, and
Dhysics and Math			kinetic energy to mass, distance, force, and time including determining the resultant of collinear
Physics and Math	AL	SCI.9-12.PS.7.4	forces acting on a body
(pgs. 43-63)	AL	301.9-12.53.7.4	Students will identify metric units for mass,
Physics and Math			distance, time, temperature, velocity,
(pgs. 43-63)	AL	SCI.9-12.PS.12	acceleration, density, force, energy, and power.
(pgs. +0-00)	/\L	001.9-12.1 0.12	Students will relate velocity, acceleration, and
			kinetic energy to mass, distance, force, and time
Rocket Activity (pgs.			including dolving problems for velocity,
69-75)	AL	SCI.9-12.PS.7.2	acceleration, force, work, and power
			according to the period
			Students will relate velocity, acceleration, and
			kinetic energy to mass, distance, force, and time
			including describing action and reaction forces,
Rocket Activity (pgs.			inertia, acceleration, momentum, and friction in
69-75)	AL	SCI.9-12.PS.7.3	terms of Newton's three laws of motion
			Students will relate velocity, acceleration, and
			kinetic energy to mass, distance, force, and time
Rocket Activity (pgs.			including determining the resultant of collinear
69-75)	AL	SCI.9-12.PS.7.4	forces acting on a body
			Students will identify metric units for mass,
Rocket Activity (pgs.			distance, time, temperature, velocity,
69-75)	AL	SCI.9-12.PS.12	acceleration, density, force, energy, and power.
		Pushing the Enve	
		2005 Science Course of Stu	
Alabama Science		334.55 5. 5.4	
Grades 9-12 (Physic	s Core)		
Activity/Lesson	State	Standards	
			Students will describe quantitative relationships
Types of Engines (for velocity, acceleration, force, work, power,
pgs. 11-23)	AL	SCI.9-12.PH.4	potential energy, and kinetic energy.
			Students will explain linear, uniform circular, and
			projectile motions using one- and two-
Physics and Math			dimensional vectors including describing forces
(pgs. 43-63)	AL	SCI.9-12.PH.1.2	that act on an object
			Students will explain planetary motion and
Physics and Math			navigation in space in terms of Kepler's and
(pgs. 43-63)	AL	SCI.9-12.PH.3	Newton's laws.
			Students will describe quantitative relationships
Physics and Math		0010407114	for velocity, acceleration, force, work, power,
(pgs. 43-63)	AL	SCI.9-12.PH.4	potential energy, and kinetic energy.
			Students will explain linear, uniform circular, and
Dookot Astinites (see			projectile motions using one- and two-
Rocket Activity (pgs.		00104001140	dimensional vectors including describing forces
69-75)	AL	SCI.9-12.PH.1.2	that act on an object
Pocket Activity (ncc			Students will identify metric units for mass,
Rocket Activity (pgs. 69-75)	AL	SCI.9-12.PH.4	distance, time, temperature, velocity, acceleration, density, force, energy, and power.
U8-13)	AL	SUI.9-12.PH.4	acceleration, density, force, energy, and power.